10

5

ABSTRACT:

An electronic component has an electrically conductive relief structure (3) which contains a salt of a poly-3,4-alkylenedioxythiophene. This salt provides the structure with a stable conductivity. The salt is a polyacid salt by preference. The polyacid salt of poly-3,4-alkylenedioxythiophene is used in the method of manufacturing a relief structure on an electrically insulating substrate. Relief structures (3) comprising tracks (311-314, 321-324) and channels (141) with track widths (tW) and channel lengths (cL) of less than 10 µm can be achieved. The tracks (311-314; 321-324) are used as electrodes (31;32), the channels (141) are used as semiconductor channels in electronic components, especially in fieldeffect transistors (11) and lightemitting diodes.

Fig. 5

# (19) World Intellectual Property Organization International Bureau



# (43) International Publication Date 22 March 2001 (22.03.2001)

**PCT** 

# (10) International Publication Number WO 01/20691 A1

(51) International Patent Classification7: H01L 51/30, H01B 1/12

(21) International Application Number: PCT/EP00/08695

(22) International Filing Date:

6 September 2000 (06.09.2000)

(25) Filing Language:

English

(26) Publication Language:

**English** 

(30) Priority Data:

99202950.4

10 September 1999 (10.09.1999) EP

99203636.8

4 November 1999 (04.11.1999) EP

(71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DE LEEUW, Dagobert, M. [NL/NL]; Prof. Holstlaan 6, NL-5656

AA Eindhoven (NL). GELINCK, Gerwin, H. [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). TOUWSLAGER, Fredericus, J. [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). WILLARD, Nicolaas, P. [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(74) Agent: DUIJVESTIJN, Adrianus, J.; Internationaal Octrooibureau B.V., Prof Holstlaan 6, NL-5656 AA Eindhoven (NL).

(81) Designated States (national): JP, US.

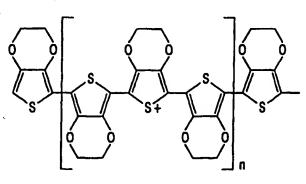
(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

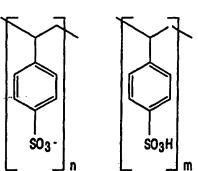
### Published:

- With international search report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

### (54) Title: CONDUCTIVE STRUCTURE BASED ON POLY-3,4-ALKENEDIOXYTHIOPHENE (PEDOT) AND POLYSTYRE-NESULFONIC ACID (PSS)





(57) Abstract: An electronic component has an electrically conductive relief structure (3) which contains a salt of a poly-3,4-alkylenedioxythiophene. This salt provides the structure with a stable conductivity. The salt is a polyacid salt by preference. The polyacid salt of poly-3,4-alkylenedioxythiophene is used in the method of manufacturing a relief structure on an electrically insulating substrate. Relief structures (3) comprising tracks (311-314, 321-324) and channels (141) with track widths (tW) and channel lengths (cL) of less than 10 μm can be achieved. The tracks (311-314; 321-324) are used as electrodes (31; 32), the channels (141) are used as semiconductor channels in electronic components, especially in fieldeffect transistors (11) and lightemitting diodes.

Oodulad.ocou